

Modernization of an MDF plant:

Result: 7% glue saving immediately

Upgrading old to Generation 8

“Only Siempelkamp knows Siempelkamp plants inside out” – true to this motto a long-standing customer decided to have its 7' x 38.5 m MDF Siempelkamp line retrofitted. The field-proven press from 1998 was, within only a short time, upgraded to a Generation 8 ContiRoll® by the experts of Siempelkamp Logistics & Service GmbH (SLS) by installing pressure distribution plates. Furthermore, the upgrade of the electrical system from the forming line to the diagonal saw was on the agenda. This modernization package saves material and costs and also increases the plant availability. The package requires relatively small effort for a large impact.

by Michael Willemen and Armin Lingen

Raised hot plate with inserted pressure distribution plates



Connection for both hot plate segments

Up to the recent modernization, the MDF plant had a daily board capacity of 800 m². The boards were finished by Siempelkamp short-cycle presses and processed to laminate flooring foremost. By upgrading the press to a ContiRoll® Generation 8 press by installing pressure distribution plates, Siempelkamp provided the long-standing customer a concept which promises advantages in the area of material savings while maintaining the same high product quality. The significantly higher precision during pressure distribution is reflected directly in the resin and wood consumption. High-quality boards can be manufactured using less resin and wood.

By installing new pressure distribution plates, pressure distribution in the press was improved. As a result, the adhesive bonds cure homogeneously. This, in turn, means that less resin is needed for the same result. To date Siempelkamp has

upgraded the pressure distribution plates for customers four different times: in this plant, in two plants of the Austrian plant operator Egger as well as at Kastamonu in Turkey – the latter as part of a press extension.

All is well which installs well

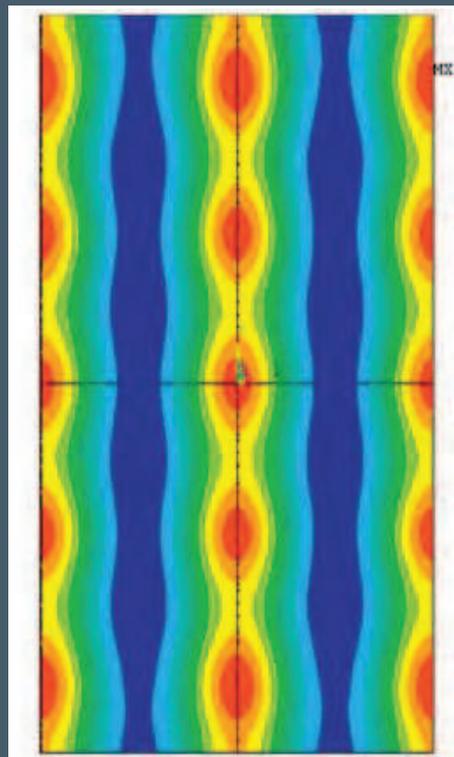
Eight months after order placement, the retrofitting works started mid July 2013. Within only a short time, the upgrade was carried out smoothly and according to schedule. The excellent cooperation between the project team consisting of Siempelkamp and customer's employees from the areas of project planning, design and transport as well as the installation personnel made this possible. The installation personnel, provided by the customer, installed the pressure distribution plates in day and night shifts under the supervision of two Siempelkamp specialists; the electrical installation was carried out

Integrated with pressure distribution plates

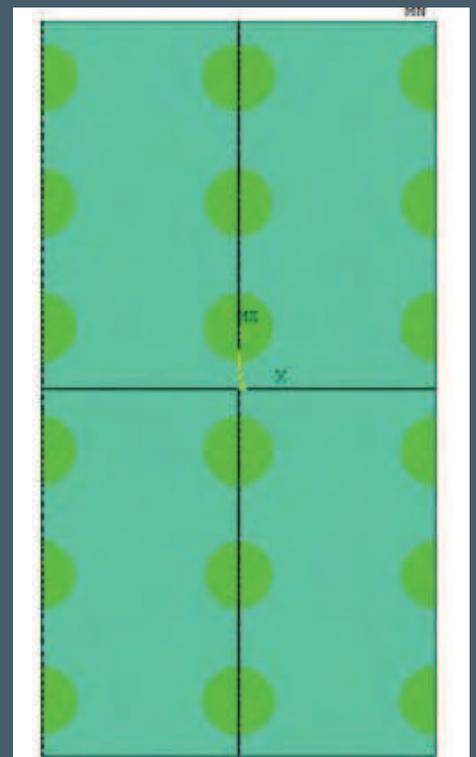


during the day shifts only. "We know each other. This makes good cooperation easier in any case," explains Michael Willemen, sales manager for modernizations and retrofits of the Siempelkamp subsidiary SLS.

A quick execution phase means short downtimes for the customer and therefore keeps costs to a minimum. The exact planning and good cooperation between customer and supplier are therefore absolutely necessary. For the installation of the pressure distribution plates, the roller rods were taken out of the press and a package consisting of upper and lower hotplatens as well as both steel belts was formed and then lifted via press cylinders. Afterwards, the pressure distribution plates were inserted in the press using special equipment and roller supports. Finally, the hotplatens were lowered into position.



Display of pressure distribution inside press without pressure distribution plates...



...and with pressure distribution plates

Feeding cart for pressure distribution plate segments



Connection of pressure distribution plates



Upgrades and modernizations – the Siempelkamp “all-round carefree” package

Siempelkamp offers a comprehensive program of modernization packages through its subsidiary Siempelkamp Logistics & Service GmbH (SLS). This service is offered for all Siempelkamp plants as well as plants made by Küsters and Bison. In this way, the team dedicates itself to the largest installed base of machines and plants for the wood-based materials industry in the world. Siempelkamp can provide the appropriate service for each system, including modernization packages for Conti-Roll® presses, multi-daylight presses, short-cycle presses, Küsters and ContiPress® plants or for finishing lines. For plant operators a modernization by Siempelkamp service personnel translates into optimized processes, productivity increases, increased plant availability but also the reduction of maintenance costs – all with short downtimes and low risks during the upgrade.

Upgrade of the electrical system by Siempelkamp

Since the available control, regulating and visualization systems were discontinued and the technical support on the part of Siempelkamp was only possible with restrictions, an upgrade of the electrical system between forming line and diagonal saw to up-to-date systems became necessary for the customer. One challenge for the entire modernization project was that the available plant functions, which are documented in circuit diagrams and programs, had to be copied one to one. In

the course of the modernization the following systems were upgraded:

- SPC (Siempelkamp Press Control) to SPC Gen. II,
- S5 to S7,
- VME to S7,
- ATR-Visualization to InTouch
- Ferrocontrol saw control to Siemens.

With these upgrades to the latest control, regulating and visualization systems, the customer increases plant availability: Spare parts can be procured easily and quickly. When a part has to be replaced, the plant

experiences only minimum downtimes. Beside the PLC hardware, the complete program and local hardware of forming line, press and double diagonal saw as well as the visualization was replaced.

Switchgear cabinets used for modernizations, such as the one carried out at the customer, are prepared, built and tested by the Siempelkamp subsidiary ATR Industrie-Elektronik GmbH. The circuit diagrams are prepared by the electrical engineering department of the parent company; the software is also written and tested there.



SPC (Siempelkamp Press Control) System

Inspection of the retrofitting works by Siempelkamp employees



S7 control

Service plays an important role for Siempelkamp

Another reason for an upgrade: Electronic components which are stored and unused for a long time become old. If a plant component fails, it can take, under certain circumstances, up to three months before a new component can be delivered. Each component has to be constructed and adjusted according to customer requirements. In the worst-case scenario a longer plant shutdown results from this. During a scheduled upgrade, however, the plant can be started up again after a short

period of time. "Turn off, upgrade, turn on, the system runs again." summarizes Armin Lingen, sales manager for electrical upgrades and modernizations at SLS, in just a few words. "Through thorough planning, Siempelkamp can carry out upgrades quickly."

90 to 95% of all electrical upgrades are carried out due to outdated systems. This is a good reason for SLS's department for electrical upgrades and modernizations to approach customers actively. "Instead of waiting until parts can no longer be procured and letting unexpected shutdowns

happen, we actively offer customers our modernization packages," explains Lingen. Customers are in this way able to prevent unscheduled and longer plant shutdowns.

The measurements taken after the modernization at the customer's site was completed demonstrate: A plant upgrade pays off. The return on investment is estimated to be less than a year.